UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,318	04/24/2002	Masafumi Fukae	011783	7474

23850 7590 08/26/2003

ARMSTRONG,WESTERMAN & HATTORI, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER	
PUTTLITZ, KARL J	
ART UNIT	PAPER NUMBER
1621	

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/019,318	FUKAE, MASAFUMI	
	Examiner	Art Unit	
	Karl J. Puttlitz	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Objections to Specification

The disclosure is objected to because of the following informalities: The specification is replete with tying errors, e.g., page 5, line34, "Thepreferredhalogenatedhydrocarbons".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) The content of the particular application disclosure;

(B) The teachings of the prior art; and

(C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. See M.P.E.P. § 2173.02.

Claims 1-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1,1-4, 9-21, 24, 25, 27-30, 35-49, 51 and 53 recite a "good solvent". The ordinary meaning of "good solvent" is unclear. Also, the specification only specifies that that a good solvent does not cause adverse effects. Accordingly, it is unclear what Applicants means by this term.

Claim 3 recites a temperature range that is –30 to 50 degrees C. Claim 4, which depends from claim3, recites a temperature range that is –20 to 45 degrees C. Accordingly, claim 4 fails to further limit claim 3.

The claims recite "NCA" in connection with the claimed compound. Applicant should provide antecedent basis for the abbreviation at the earliest instance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 1, 2, 3, 4, 5, 25, 28, 29, 30, 31, 42, 43, 49, rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,831,184 to Youssefyeh et al. (US 184).

The claims are drawn to, inter alia, a crystallization method of N-(1(S)-ethoxycarbonyl-3-phenylpropyl)-L-al- anine N-carboxylic anhydride which comprises mixing a solution of N-(1(S)-ethoxycarbonyl-3-phenylpropyl)-L-alanine N-carboxylic anhydride in a good solvent with an aliphatic hydrocarbon solvent to crystallize said N-carboxylic anhydride, the solution of said N-carboxylic anhydride in the good solvent being added to the aliphatic hydrocarbon solvent to thereby effect crystallization while inhibiting an oil formation and scaling of said N-carboxylic anhydride. See claim 1, for example.

For the purposes of this rejection, the examiner construes the term good solvent as one that does not have adverse effects, pursuant to its broadest possible interpretation, consistent with Applicant's definition in the specification at page 12, lines 15-17. See M.P.E.P. § 2111 ("During patent examination, the pending claims must be

"given the broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).").

US 184 teaches crystallization of N-[1-(S)-Ethoxycarbonyl-3-phenylpropyl]-(S)-alanyl-N-carboxyanhydride. In this regard the reference teaches that N-[1-(S)-Ethoxycarbonyl-3-phenylpropyl]-(S)-alanine is suspended in dry THF and an excess of phosgene in toluene was added portion-wise. The resulting mixture was stirred for five minutes at room temperature and then heated to a gentle reflux for two and a half hours. All material was dissolved upon the first addition of phosgene, i.e., the "good solvent". The solvent was evaporated and the residue was placed under high vacuum (oil pump) upon which time the N-carboxyanhydride (NCA) crystallized. See Example 5, at the paragraph bridging columns 10 and 11.

The difference between the process covered in the rejected claims and that disclosed by US 184, is that while US 184 teaches that the "good" solvent and the hydrocarbon solvent are added to NCA, the rejected claims recite that the NCA is in the good solvent with an aliphatic hydrocarbon solvent.

However, the rearrangement of steps , absent evidence of unexpected results, is prima facie obvious over a prior art reference teaching all of the steps. See M.P.E.P. § citing "*In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is *prima facie* obvious.)").

Accordingly, one of ordinary skill would have been motivated to modify the process taught in US 184 to include a step wherein the NCA is in the good solvent with an aliphatic hydrocarbon solvent since this is tantamount to a rearrangement in the order of steps, absent a showing of unexpected results.

Allowable Subject Matter

1, 2, 3, 4, 5, 25, 28, 29, 30, 31, 42, 43, 49, Claims 6-24, 26, 27, 32-41, 44-48 and 50-53 are allowable, outside of the rejection based on § 112, second paragraph described above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (703) 306-5821. The examiner can normally be reached on Monday-Friday (alternate).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (703) 308-4532. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Karl J. Puttlitz
Assistant Examiner

Johann R. Richter, Ph.D., Esq.
Supervisory Patent Examiner
Biotechnology and Organic Chemistry
Art Unit 1621
703-308-4532